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## ABSTRACT OF THE DISCLOSURE

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3 This invention enables improved reception of ATSC terrestrial broadcast digital  
4 television signals. ATSC DTV is a standard of the Advanced Television Systems  
5 Committee (ATSC) for the terrestrial broadcast of digital television. ATSC DTV  
6 broadcast signals are subject to impairment due to multipath. Improved radio reception  
7 in multipath is possible when substantial reference components are transmitted as a  
8 component of the transmitted radio. However, the introduction of new signal  
9 components to the ATSC DTV broadcast signal represents a modification to the standard  
10 which weaken the benefits of standardization. This invention resolves this dilemma by  
11 carefully introducing data components into the data multiplex in a form compatible with  
12 the ATSC DTV standard. Data components are chosen so as to induce a substantial  
13 repeating reference component into the ATSC DTV modulation waveform. The induced  
14 reference waveform enables clear reception in multipath while the integrity of the  
15 standard is preserved.

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